

## CLAIMS

1. Method comprising:

processing auditory canal dimension measurement data representing dimensions of an auditory canal to generate outside auditory canal dimension data that represents outside dimensions of the auditory canal;

processing the outside auditory canal dimension data to generate outside mold data;  
and

creating a negative hearing aid mold from the outside mold data using rapid prototyping, with the negative hearing aid mold having an inside surface, with the inside surface representing the outside dimensions of the auditory canal from the outside mold data, with the negative hearing aid mold suitable for receipt of a soft solid.

2. The method of claim 1 with processing the auditory canal dimension measurement data representing dimensions of the auditory canal comprising measuring the outside dimensions of an impression of the auditory canal to generate the outside auditory canal dimension data.

3. The method of claim 2 with measuring the outside dimensions of the impression of an auditory canal comprising measuring the outside dimensions of the impression of the auditory canal with a laser to generate laser measured auditory canal data.

4. The method of claim 2 with measuring the outside dimensions of the impression of an auditory canal comprising:

measuring the outside dimensions of the impression of the auditory canal with a laser to generate laser measured auditory canal data; and

generating point cloud/STL data from the laser measured auditory canal data.

5. The method of claim 2 further comprising analyzing the impression to generate auditory canal point cloud/STL data using a laser to measure a plurality of surface positions on the impression to generate the auditory canal point cloud/STL data.
6. The method of claim 1 with processing the outside auditory canal dimension data to generate outside mold data comprising generating point cloud/STL data.
7. The method of claim 6 further comprising generating stereo lithography data from the point cloud/STL data.
8. The method of claim 1 with creating the negative hearing aid mold comprising creating a negative hearing aid mold from the outside mold data using stereo lithographic techniques with the negative hearing aid mold suitable for use as an outside mold for the construction of a soft solid hearing aid.
9. The method of claim 1 with creating the negative hearing aid mold comprising making an epoxy based hearing aid mold from the outside mold data using rapid prototyping such as stereo lithography.
10. The method of claim 1 with the creating the negative hearing aid mold comprising making an epoxy based hearing aid mold from the outside mold data using rapid prototyping such as stereo lithography with SLA Epoxy Resin Si-10.
11. The method of claim 1 with the creating the negative hearing aid mold comprising making an medical grade acrylonitrile butadiene styrene ABS based hearing aid mold from the outside mold data using rapid prototyping such as fused deposition modeling.
12. The method of claim 1 with the creating the negative hearing aid mold comprising making an powdered nylon hearing aid mold from the outside mold data using rapid prototyping such as laser sintering.

13. The method of claim 1 with the creating the negative hearing aid mold comprising making an powdered nylon hearing aid mold from the outside mold data using rapid prototyping such as Digital light processing.

14. The method of claim 1 with the creating the negative hearing aid mold comprising making an epoxy based hearing aid mold from the outside mold data using rapid prototyping such as stereo lithography with epoxy resin.

15. The method of claim 1 further comprising:  
mounting the negative hearing aid mold on a faceplate; and  
placing a soft solid in the negative hearing aid mold.

16. The method of claim 15 further comprising installing hearing aid electronics and transducers on the face plate before the negative hearing aid mold is mounted on the faceplate.

17. The method of claim 15 with placing the soft solid in the negative hearing aid mold comprising placing silicone in the negative hearing aid mold.

18. The method of claim 1 further comprising installing hearing aid transducers and electronics in the negative hearing aid mold.

19. The method of claim 1 with processing the auditory canal dimension measurement data comprising processing with a computer processor the auditory canal dimension measurement data representing dimensions of the auditory canal to generate the outside auditory canal dimension data.

20. The method of claim 1 with processing the outside auditory canal dimension data comprises processing with a computer processor the outside auditory canal dimension data to generate outside mold data.

21. Method of claim 1 further comprising measuring auditory canal dimension measurement data representing dimensions of an auditory canal directly from the auditory canal to generate outside auditory canal dimension data that represents outside dimensions of the auditory canal.

22. Method of claim 1 with creating a negative hearing aid mold from the outside mold data using rapid prototyping further comprises creating the negative hearing aid mold from the outside mold data using rapid prototyping such as stereo lithography.

23. Method of claim 1 with creating a negative hearing aid mold from the outside mold data using rapid prototyping further comprises creating the negative hearing aid mold from the outside mold data using fused deposition modeling.

24. Method of claim 1 with creating a negative hearing aid mold from the outside mold data using rapid prototyping further comprises creating the negative hearing aid mold from the outside mold data using Digital light processing.

25. Method of claim 1 with creating a negative hearing aid mold from the outside mold data using rapid prototyping further comprises creating the negative hearing aid mold from the outside mold data using laser sintering.

26. A method for making a negative hearing aid mold comprising the steps of:  
processing laser measured auditory canal dimension measurement data representing dimensions of an auditory canal to generate outside auditory canal dimension data that represents outside dimensions of the auditory canal, with the laser measured auditory canal dimension measurement data obtained with a laser measurement system;

processing the outside auditory canal dimension data to generate outside mold data;  
and

creating a negative hearing aid mold from the outside mold data using rapid prototyping, with the negative hearing aid mold having an inside surface, with the inside

surface representing the outside dimensions of the auditory canal from the outside mold data, with the negative hearing aid mold suitable for receipt of a soft solid.